

**IN THE CLAIMS:**

1. (Currently Amended) A limb for a breathing circuit comprising:

a ~~very thin walled~~ flexible conduit having a first end, ~~end~~ and a second end and a  
breathing gases pathway therebetween defined by a wall, said wall comprising a very thin  
membrane having a said very thin walled conduit having a wall thickness less than 50 microns,  
and said membrane is insufficiently sturdy to be self supporting, said conduit is insufficiently  
sturdy such that said conduit would experience substantial internal volume changes as a result of  
said wall deforming due to fluctuating pressure within said conduit from patient breathing;

a first connector fixed to said first end of said conduit; ~~conduit~~,

a second connector fixed to said second end of said conduit; ~~conduit~~, and

an elongate reinforcing member lying freely within said ~~very thin walled~~ conduit along a  
non-tortuous path from one end of said conduit to the other end of said conduit, and connected  
with said first connector and said second connector, such that said elongate reinforcing member  
reinforces said conduit against said substantial volume changes that would occur in said conduit,  
but for said elongate reinforcing member contraction along the length of said conduit due to  
fluctuating internal pressure, and wherein said elongate reinforcing member does not include a  
passageway large enough for gases delivery to a patient.

2. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said elongate  
reinforcing member has a cross sectional area, measured from the outer perimeter, less than 10%  
of the cross sectional area of the bore of said breathing conduit.

3. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member is hollow, and said hollow elongate reinforcing member is blind terminated at each end by said first connector and said second connector.

5 4. (Currently Amended) A limb for a breathing circuit as claimed in ~~claim 2~~, claim 3, wherein said hollow elongate reinforcing member is hollow and said hollow elongate reinforcing member is large enough to be used as a pressure measurement or feedback conduit.

10 5. (Previously Presented) A limb for a breathing circuit as claimed in claim 2, wherein said elongate reinforcing member has a solid, substantially circular cross section, and two ends.

6. (Previously Presented) A limb for a breathing circuit as claimed in claim 2, wherein said elongate reinforcing member includes a positive temperature coefficient heating element.

15 7. (Previously Presented) A limb for a breathing circuit as claimed in claim 2, wherein said elongate reinforcing member includes a resistance heating element.

20 8. (Previously Presented) A limb for a breathing circuit as claimed in claim 2, wherein the length of said elongate reinforcing member is between 100.5% and 105% of the length of said conduit.

9. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said connectors have a first end suitable for making connection with auxiliary equipment and a second end for making connection with a breathing conduit, and

an annular shoulder between said first end and said second end,

said second end extending along an axis and having a substantially circular cross section, and

said second end having at least one protrusion on an outer surface for interlocking engagement with a helical rib of a breathing conduit.

10. (Original) A limb for a breathing circuit as claimed in claim 9, wherein said protrusion is an external thread having a pitch suitable for engagement with said helical rib of a breathing conduit.

11. (Original) A limb for a breathing circuit as claimed in claim 9, wherein said shoulder portion has an annular recess for receiving a securing collar having an extrusion axis.

12. (Original) A limb for a breathing circuit as claimed in claim 9, wherein said second end of said end connector has a recess substantially parallel with said axis for receiving said elongate reinforcing member.

13. (Original) A limb for a breathing circuit as claimed in claim 11, wherein said securing collar has a recess substantially parallel with said extrusion axis for receiving said elongate reinforcing member.

5 14. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member is resilient and does not plastically deform in use, under normal flexing and bending of said limb.

15. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said elongate  
10 reinforcing member has a cross sectional area between  $3 \text{ mm}^2$  and  $12.5 \text{ mm}^2$ .

16. (Original) A limb for a breathing circuit as claimed in claim 1, wherein said elongate reinforcing member has a minimum bending stiffness between  $693 \text{ N.mm}^2$  and  $11096 \text{ N.mm}^2$ .

15 17. (Original) A limb for a breathing circuit as claimed in claim 1, further comprising:  
a braided sheath surrounding said conduit and being fixed at and around one end to said first connector and at and around its other end to said second connector.

18. (Original) A limb for a breathing circuit as claimed in claim 17, wherein said sheath is a  
20 braided tube braided from polyethylene terephthalate monofilaments.

19. (Currently Amended) A method for manufacturing a limb for a breathing circuit comprising:

providing a ~~very thin-walled~~ flexible breathing conduit having a first end, ~~end~~ and a second end and a breathing gases pathway therebetween defined by a wall, said wall comprising  
5 a said very thin membrane walled flexible breathing conduit having a wall thickness less than 50 microns such that said membrane is insufficiently sturdy to be self supporting, and said conduit is insufficiently sturdy such that said conduit would experience substantial internal volume changes as a result of said wall deforming due to fluctuating pressure within said conduit from patient breathing,

10 locating an elongate reinforcing member having a first and a second end, lying freely within said conduit, along a non-tortuous path from one end of said conduit to the other end of said conduit,

fixing a first end connector with a first end of said breathing conduit, and a first end of said elongate reinforcing member, and

15 fixing a second end connector with said second end of said conduit and said second end of said elongate reinforcing member, such that said elongate reinforcing member reinforces said conduit against said substantial volume changes that would occur in said conduit, but for said elongate reinforcing member, contraction along the length of said conduit due to fluctuating internal pressure, and wherein

20 said elongate reinforcing member does not include a passageway large enough for gases delivery to a patient.

20. (Original) A method for manufacturing a limb for a breathing circuit as claimed in claim

19, further comprising:

locating a reinforcing mesh having a first and a second end, over the outside of said  
breathing conduit,

5 fixing a first end connector with a first end of said breathing conduit, and a first end of  
said reinforcing mesh, and

fixing a second end connector with said second end of said conduit and said second end  
of said reinforcing mesh.

10 Claims 21-24. (Cancelled)